DIRECTIONS

FOR PREPARING

AERATED MEDICINAL

WATERS,

BY MEANS OF THE

IMPROVED GLASS MACHINES

MADE AT

LEITH GLASS-WORKS.

BIBLIOTH. COLL. REG. MED. ED.

EDINBURGH:
PRINTED FOR WILLIAM CREECH:

MDCCLXXXVII.

DIRECTIONS

FOR MAKING

SIMPLE AERATED WATER.

I. SET the middle glaſs of the machine, ſeparated from the reſt, on its wooden pedeſtal, and fill it with pure water.

II. Hold the bottom glaſs in the poſition repreſented in Fig. 1. and putting the wide

wide glaſs funnel into the mouth of it, throw in as many half ounces Troy of pounded chalk or marble, as there are Engliſh quarts of water in the middle glaſs; the chalk will fall into one ſide of the bottom, and ſhould be collected cloſe together into that ſide, by ſhaking and ſtriking the glaſs properly for that purpoſe.

III. Take out the funnel, and ſet the bottom glaſs a little inclined towards the contrary ſide, as in Fig. 2. that ſide in which the chalk lies being a little raiſed and ſupported by a firm prop, or by two wedges; then pour into the lower ſide, and, without diſturbing the chalk, a quantity of the ſtrong vitriolic acid, equal in weight to the chalk, and afterwards add as many Engliſh pints of water as there are ounces of the chalk, which water muſt alſo be poured in ſlowly and cautiouſly, without diſturbing the chalk.

IV. Let the bottom glaſs remain in the ſame poſition, in which it muſt be ſecured from ſlipping down, and care taken that it be not diſturbed, but join to it immediately the other pieces of the machine ; the whole of which will lean to one ſide, in conſequence of the inclination of the bottom-glaſs, as in Fig. 3. ; then taking hold of the top-glaſs, without lifting the machine, pull the top a few inches more towards that ſide to which it inclines, and then let it go back again. This being repeated, will diſturb a little of the chalk, and occaſion air to riſe into the middle glaſs, and water into the top-glaſs. Whenever you perceive that, by repeated gentle ſhakes, ſo much has ariſen, that the middle glaſs cannot retain any more air, and that a part begins to eſcape through the crooked pipe into the top-glaſs, you muſt leave the machine in perfect reſt, and in the ſame inclined poſition ſix hours.

V. At the end of the ſix hours, looſen and raiſe the top-glaſs a little from the middle one, without taking them aſunder, but ſo far that the end of the crooked pipe be raiſed a little above the water; thus the water will run down from the top into the middle glaſs, and fill it quite full as at firſt, then fix the top-glaſs again, and ſhake the machine gently, in the ſame manner as in Article IV. until the air begin to eſcape into the upper glaſs; after which the machine muſt be left again at reſt ſix hours, and then the water let down again from the top-glaſs into the middle one, as above directed.

This ſhaking of the machine, and ſubſequent reſt, and letting down of the water from the top-piece into the middle one, is to be repeated every ſix hours, or, if the water is wanted ſooner, every four hours, until the whole air is expelled from the chalk, which will require more effectual ſhaking and ſtirring up of the chalk, in the end

end of the operation than in the beginning.

N. B. During all the time the machine is employed, care muſt be taken that the ſtopper at the top ſit looſe, and occaſionally allow ſome air to eſcape from the top-glaſs. Were that ſtopper to be fixed firmly in its ſocket, and to ſhut it quite cloſe, it would certainly occaſion the machine to burſt.

VI. Laſtly, let down the water from the top-glaſs into the middle one, and ſeparate the three glaſſes of the machine aſunder, and immediately pour the prepared water into very clean bottles, and cork it up with new corks, and lay the bottles on their ſides, in a cool place; in which ſituation it may be preſerved good a long time.

N. B. In preparing waters with this machine, it is neceſſary to allow time for the air to act on the water. If the machine be be ſhaken too often, or too much, the air will be diſcharged too faſt, and will paſs through the water, and eſcape without acting ſufficiently on it.

There is, however, a manner of ſhaking the machine, which greatly promotes the action of the air on the water; but it ſhould not be practiſed until after the firſt or ſecond ſix hours. This manner of ſhaking is performed by quick and ſhort jerks, which daſh and mingle the air and water together.

To avoid a riſk of cracking the glaſs, the vitriolic acid employed in each operation may be mixed with an equal meaſure of water in a China veſſel ſome hours before it is uſed; thus we avoid expoſing the glaſs to the great heat which this acid produces when firſt mixed with water.

TO MAKE

ALKALINE AERATED WATER.

Diſſolve one-half ounce Troy of Salt of Tatar, or pure alkali, in every English quart of the water, which is put into the middle piece of the machine. This may be done in a large decanter, a day or two before the water is prepared, that you may pour it into the machine, clear from a ſmall ſediment, which will ſettle to the bottom of the decanter. Then proceed to aerate this alcaline water, according to the foregoing directions; taking care only to put into the bottom piece one ounce of chalk, inſtead of each half-ounce above preſcribed, and alſo a proportional exceſs in the quantity of the vitriolic acid.

TO MAKE

SELTERS WATER.

To every Engliſh quart of water, which is put into the middle glaſs of the machine, add the following ingredients.

	Chalk, in fine powder,	five grains.
	Magneſia . .	[illegible]
✓	Salt of Tartar .	~~ſeven~~
x	Common ſalt .	thirty-~~four~~

Then proceed to aerate the water with theſe ingredients in it, preciſely in the ſame manner as in preparing ſimple aerated water.

ANOTHER WAY.

In place of the above ingredients, add to each Engliſh quart of the water forty grains of ſalt of Tartar, and thirty-four of common ſalt, and proceed to aerate as above.

TO MAKE

PYRMONT WATER.

To every Engliſh quart of water, contained in the middle glaſs, add what follows:

Chalk, in ſine powder,	6 grains.	
Magneſia . . .	~~[illegible]~~	15
Vitriolated calcareous earth	12	
Epſom ſalt . .	8	
Common ſalt .	2	

And one piece of iron wire, like a ſine knitting needle.

Then proceed to aerate according to the ſirſt directions.

TO MAKE

SPAW WATER.

To every Engliſh quart of the water contained in the middle glaſs add theſe ingredients.

	Chalk finely powdered	2½ grains.
1/2	Magneſia . .	6 ^
I	Salt of Tartar .	[illegible]
	Common ſalt . .	1

And one piece of wire, like a fine knitting needle.

And proceed to aerate as in the firſt directions.

ADVER-

ADVERTISEMENT.

GLASS MACHINES, *of different ſizes and conſtructions, for preparing Medicinal Waters, and all ſorts of Glaſſes for Chemical and Philoſophical Experiments, made by* The Edinburgh Glaſs-houſe Company, *at their* Bottle, Flint, and Window-Glaſs Manufactory, Leith.

ARCH. GEDDES *Manager.*